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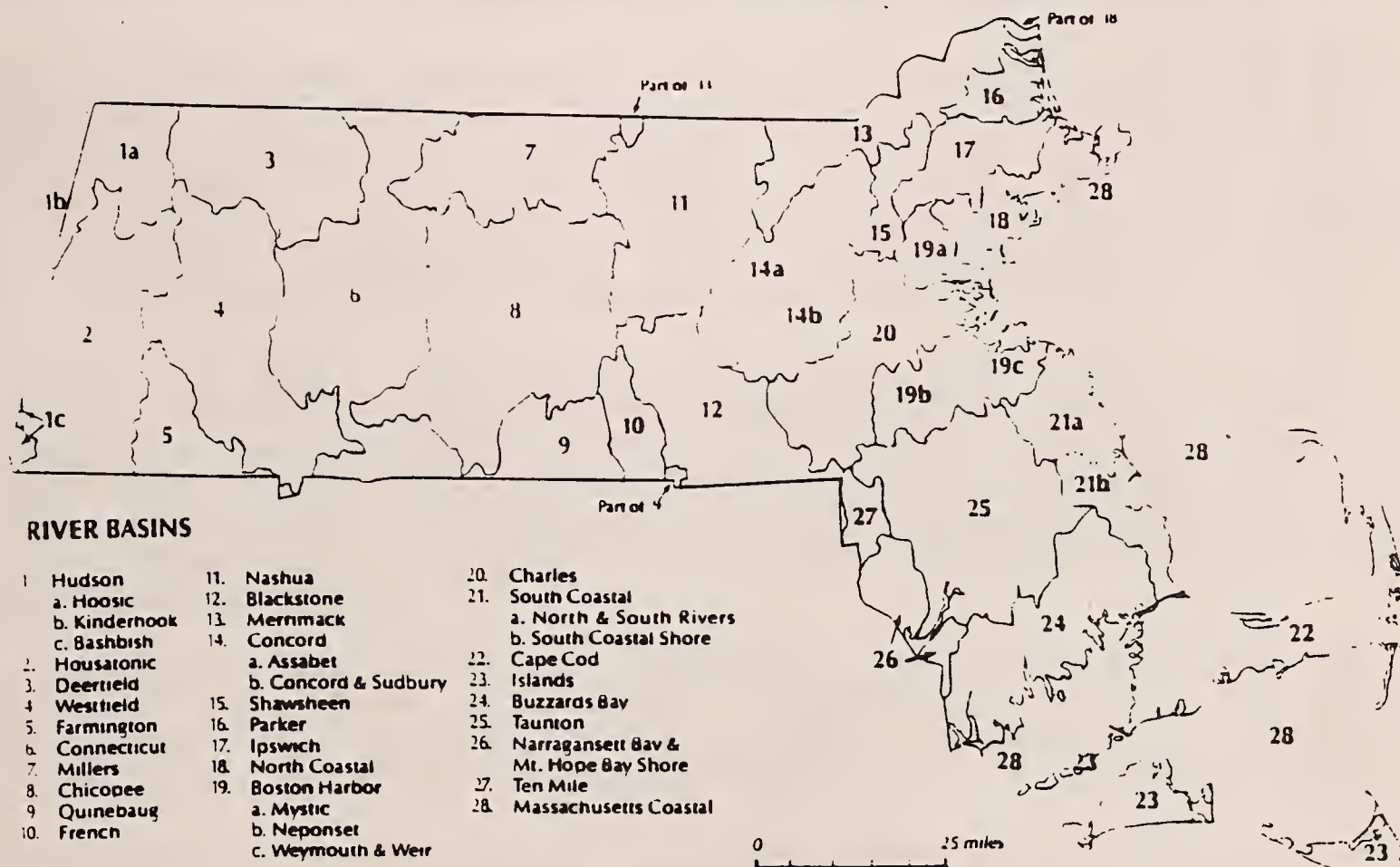
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## A Rivers Policy for the Commonwealth:

### A Five-Year Action Plan to Protect Massachusetts Rivers and Watershed Lands



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I love rivers; they do more than bear  
merchandise--ideas float along their surface.  
Rivers, like clarions, sing to the ocean of the  
beauty of the earth, the fertility of plains, and  
the splendour of cities.

--Victor Hugo

The earth is common ground...gradually the idea is taking form  
that the land must be held in safekeeping, that one generation is  
to some extent responsible to the next, and that it is contrary to  
the public good to allow any individual, merely because of his whim  
or ambitions, to destroy almost beyond repair any part of the soil  
or water or even the view.

--E.B. White, 1942

A river is more than an amenity. It is a treasure.

--Oliver Wendell Holmes

#### A RIVERS POLICY for the COMMONWEALTH

The rivers of the Commonwealth are public property and the state is  
their steward. Rivers have literally shaped the contours and character  
of our state, providing a tremendous variety of landscapes from high  
mountain streams, to wide floodplains and rolling hills, to estuaries  
teeming with life. They have provided sustenance in the form of water,  
food, irrigation, transportation, power, recreation and spiritual solace  
to the state's inhabitants, both past and present.

Rivers and their shorelands are among the most important and  
productive habitats for fisheries and wildlife. Protecting river  
corridors not only supports wildlife diversity, but also protects and  
improves water quality by absorbing pollution from both adjacent sources  
and the river itself. Finally, rivers and the lands along them have an  
aesthetic appeal as is evidenced by the increasing encroachment of  
development along their banks.

People have a deep personal attachment to the rivers that shape their  
communities and endow them with a sense of place. Rivers have  
irreplaceable value as ecological, scenic, recreational and historic  
resources with inherently restorative powers for the human psyche.

The rivers of Massachusetts have long been working rivers, providing  
power for and accepting wastes from the earliest mills to the present.  
Massachusetts' rivers have been among the most abused in the nation,  
having suffered numerous injuries from industrial discharges,





inadequately treated sewage, inappropriate riverfront development and other causes. The citizens of this state and the nation have invested over \$2.5 billion dollars in the restoration of Massachusetts' rivers and streams since the passage of the Clean Water Act in 1972.

In spite of these efforts, intensifying development pressure within river corridors threatens to irrevocably damage their natural integrity. The increasing stresses and often competing demands placed on river systems for water supply and a multiplicity of other uses requires that decisions affecting river corridors be made comprehensively.

A statewide rivers policy is hereby enacted to stop the degradation of the state's rivers, protect against any loss of the improvements made in the past fifteen years, and spur the restoration and enhancement of our rivers. The policy has three broad features:

\* **ASSURE NO FURTHER DEGRADATION OF RIVER CORRIDORS** by giving top priority to the protection of the natural integrity of rivers, their tributaries and adjacent lands and insuring that all other uses are consistent with that goal. Some areas are worthy of preservation in their natural state, while others may be suitable for careful development that is designed, constructed and maintained in an environmentally sound manner. Previously degraded river corridors should be energetically restored and revitalized. Adoption of a natural resource based protection policy focuses on the ecological and cultural values of the resource, giving increased weight to the natural features and functions of rivers, and making decisions with an emphasis on rivers as living systems.

\* **ESTABLISH GREEN CORRIDORS**, a system of protected, connected open space lands along every river, wherever feasible, as the goal of all state programs affecting rivers. Green river corridors provide an effective approach to linking dispersed and inadequately sized open space parcels into more functional and valuable natural systems. They are an effective means of improving water quality, preserving scenic landscapes, protecting plant and animal species diversity, enhancing flood protection and providing valuable public access to natural settings for passive and active recreation.

\* **RIGHTS AND RESPONSIBILITIES:** The present and future citizens of the Commonwealth are entitled to the protection of the environmental quality of the state's rivers. It is also the responsibility of every citizen, business and governmental agency to act to safeguard the integrity of river corridors. Benefits of public investment in our rivers should accrue to the public as a whole and not be diverted for private gain. Resources should not be invested in a manner that causes damage to river systems. Any state action along or near rivers should promote the intent of this policy.





## MASSACHUSETTS RIVER PROTECTION

Each of the New England states "has some sort of river protection legislation," according to the New England Conference of Governors, "but no state considers its program sufficient." Massachusetts EOEAs have nearly a dozen divisions and programs focused directly on rivers (and another dozen indirectly relate to river issues), yet there has been no policy to articulate the importance of rivers to the state's ecological and economic well-being or to focus these diverse river-related programs.

A rivers policy is an effective way to clarify, direct, manage, reinforce and coordinate a number of interlocking issues ranging from point and non-point source pollution, acid rain, drought, open space protection and access, and current and future water quality and supply.

### Why Protecting Our Rivers is Important

#### **Rivers and Watersheds Are the Infrastructure of Nature**

Like the built systems which keep energy, information, water and materials flowing through the Commonwealth, rivers conduct the water; nurse the fisheries and shellfisheries; nourish the wetlands; feed many aquifers, reservoirs and ponds; produce energy; irrigate agricultural lands; receive wastewater; and generally provide the foundation for wildlife and human settlement. Rivers and their shores often serve as thoroughfares for migrating or foraging fish, birds and other animals. Historically, rivers have been the sculptors of the landscape and the feature which determined settlement patterns, agricultural and industrial prosperity and the success of commerce.

River basins (rivers and their watersheds) are the natural hydrological boundary for water resources decision making.

#### **Rivers Support Economic Activity**

Massachusetts residents spend nearly \$500 million each year on freshwater fishing, according to the U.S. Fish & Wildlife Service. Anglers spend another \$600 million each year on related gear, food and lodging, and an additional \$250 million on boating. It is estimated that 30% of the state's \$6.7 billion tourist industry (\$41 billion indirect income) is based on people who come to Massachusetts for outdoor recreation. (Massachusetts Audubon Society, "Eden's End.") Over 450,000 people visited Quabbin Reservoir in 1988.





Shellfishing and commercial fishing are major businesses for the state, bringing in \$278.9 million in direct income according to the 1987 National Marine Fisheries Service. The Massachusetts Division of Marine Fisheries estimates that the state is losing as much as \$79 million per year due to the loss of shellfish beds closed by contamination from human pollution. Many of the best shellfish beds are at the mouths of the coastal rivers. 70% of all commercial fish and shellfish depend on estuaries at river mouths for spawning or nurseries. Each acre of the Atlantic coast wetland-estuary system is capable of producing up to 125 pounds of commercial fish. Ocean catches are being diminished by ocean pollution; river pollution means we have less and less capability to restore the lost fisheries.

Rivers also supply water to industrial and commercial users ranging from manufacturers who need cooling or processing water to farmers who need irrigation waters. Some 20,000 acres of farmland in Massachusetts are irrigated. 12,000 of those acres are involved in the \$90 million annual cranberry business. Many of these farmers use water which is diverted from rivers and streams. A significant number of local utilities also use river water for cooling. In addition, the state also has 95 licensed hydropower dams generating over 308,000 kilowatts electricity.

### **Rivers Attract an Enormous & Diverse Constituency**

Trout Unlimited, one of the most active groups of avid anglers in the country, has almost a thousand members in Massachusetts. Over 260,000 residents buy freshwater fishing licenses each year; another 17,000 people from out of state purchase licenses as well. There are now watershed associations in 21 of the 27 major river basins, and a number of smaller ones. Their memberships run in the thousands. River events like the Annual Head of the Charles even bring people from other countries--5,000 people are expected to participate in 1989. As many as 200,000 people come to witness this event along the river each year.

Business and industry have been attracted to the idea of river protection: Digital Equipment Corporation and the Taunton Industrial Development Council are two particular examples. Many businesses support watershed associations because they believe it is economically important to improve and protect rivers. Given the relatively high cost of living in Massachusetts, the quality of life - including the natural landscape features such as rivers and the opportunity to enjoy relatively unspoiled countryside within easy reach of more developed areas - is crucial to Massachusetts' sophisticated high tech industries. Rivers are featured in several of the Heritage Parks -- the Merrimack is the key attraction of the spectacularly successful Lowell Heritage Park.





Because they do not conform to political boundaries and because they are needed or cherished by widely different groups--from irrigating farmers to commercial fishermen to bird watchers and canoeists--rivers proffer an excellent incentive to varied constituencies to join together and bypass traditional structures to solve difficult problems such as water supply or managing development. The Watershed Associations do an excellent job of dealing with these kinds of issues in a variety of creative ways.

### **Rivers Are Crucial to Water Supply**

67% of the state's population relies on water supply from surface water. The Merrimack River alone provides water for more than a quarter million Massachusetts residents as well as for ten New Hampshire cities and towns. The Quabbin and the Wachusett reservoirs are fed by the Swift, Ware, Stillwater and Quinnepoxet Rivers, respectively, to service the 2.5 million people in the MWRA area. These rivers provide over half of the state's population with their water supply.

Many rivers are also connected to groundwater supplies. Wells located near rivers can draw from them during dry periods. Minimum stream flow is a crucial factor for sustaining stream health and water quality and supply.

The cost of clean water is fast becoming a major factor in planning for future water supplies. More stringent federal standards for drinking water mean that water treatment plants will be necessary for many supplies now unprotected and untreated. The cost of building a treatment facility for Quabbin and Wachusett reservoirs has been estimated between \$238 million and \$334 million. As new contaminants have been identified, the cost of "cleaning" polluted water supplies or restoring contaminated wells is beyond reach for many towns. In some cases, technology is not available to remove pollutants. Protecting our rivers and related water supplies is much more cost effective than waiting until there is a problem which cannot be cleaned up.





## The Challenges We Face in Protecting Our Rivers

### **Pollution:**

Since 1972 more than 2.5 billion federal, state and local tax dollars have been spent to clean up Massachusetts rivers. Major improvements have been achieved, In 1972, 16% of our rivers met the standards as fishable and swimmable today it is close to 50%. The once nearly solid Nashua and the recently noxious smelling Assabet are two examples of rivers that are on their way to being restored. Most of the improvements have been due to installation of wastewater treatment plants. It takes an average of 12 years and \$55 million to upgrade or replace a treatment facility. The average treatment plant size is about 11.6 million gallons per day and the average cost for a new plant is \$5/gallon. Point source pollution remains a problem because some existing facilities need to be upgraded and or replaced.

There are five main threats to protecting this enormous investment by the taxpayers:

- 1) Continued legal and illegal point sources, particularly the lack of on-site industrial waste reduction and pre-treatment that add to the pollution burden.

- 2) Non-point sources are now becoming a major pollution source as point sources are better controlled. Increased development adds to the problems of combined sewer overflows (CSO's), storm water runoff, agricultural runoff, erosion and sedimentation, failing septic systems and leaking underground storage tanks.

- 3) New toxics are now being recognized and have not been measured in earlier assessments of water quality. These pollutants are hard and expensive to clean up.

- 4) Development is encroaching on riverfronts, flood plains and wetlands causing increased erosion, runoff and septic system discharges, as well as altering the quality of landscape, reducing recreation opportunities, fragmenting wildlife habitat, and increasing demand for water supply and waste water disposal.

- 5) The state, cities and towns face a lack of funding for protecting riverfronts through purchasing open space buffers or for new or improved treatment systems. The federal share of treatment plant funding has dropped from 75% in recent years to zero by 1992.

### **Open Space:**

Rivers are by nature a special sort of open space, as the view from a canoe or on a pair of ice skates makes clear. In "Losing Ground," by the Massachusetts Audubon Society, the loss of open space to development is estimated at 30,000 acres per year - some





600 acres or twelve Boston Commons per week. Vegetated river corridors have tremendous value for wildlife transit and habitat, pollution buffers, erosion control, shade for cooling water (for fish habitat and eutrophication control) and wetlands and groundwater protection, as well as public access.

Much of our existing publicly owned open spaces (558,000 acres in 4,000 parcels) are typically too small, oddly shaped or too distant from other open spaces to serve as healthy habitats and ecologically viable systems.

Rising land prices, unmanaged development, and insufficient state and local funds and land use controls, make protection of river corridor open space increasingly difficult.

### **Public Access:**

Rivers provide multi-faceted opportunities for recreation: boating of many types, fishing, riverfront walks and refreshing views, attractive picnic spots, wildlife observation, and swimming. Nearly 30% of the state's population lives within the metropolitan areas of the Charles, Neponset, Merrimack and Concord River basins. But the state supported public access sites are relatively few: 40 sites have been developed by the Public Access Board on over 10,000 miles of rivers and tributaries. The Department of Environmental Management has 102 state forests and parks in 82 communities (out of 351) which offer fishing, boating or canoeing and 39 swimming beaches have been developed in state parks on either freshwater lakes or streams. 82 communities outside the Massachusetts Water Resources Authority area operate reservoirs for public water supply. 60% of these do not allow recreational activity on the reservoir or adjacent lands; the rest limit recreation on the reservoir or adjacent land. The most recent Statewide Comprehensive Outdoor Recreation Plan found that outdoor water-based recreation was one of the greatest needs in the state. A number of factors increase the difficulties of public access:

- 1) The price of land is skyrocketing in all parts of the state. Any delay in purchasing access parcels means a large increase in price or the loss of sites.

- 2) Continuing private development precludes potential public access.

- 3) Funding constraints limit the ability to manage and provide surveillance to public access sites. There is the lack of an ethos of appreciation and responsibility for our public river resources, to encourage town, citizen and business participation in maintenance and management of sites.

- 4) The need to protect water supply sources conflicts at times with recreational use of these water resources.



## What We Intend to do to Meet the Challenges

We need a policy which declares the fundamental importance of river systems to the state's ecology and economy, and an action plan which spells out the intention of EOEa and its agencies to:

- \*Protect the enormous public investment to date in cleaning up our water;

- \* Intensify enforcement of environmental laws and regulations that pertain to rivers;

- \* Increase riverfront corridors for open space protection, public access and resource (water and habitat) protection;

- \* Improve management of EOEa river programs and public access sites and coordinate agency efforts both inside and outside EOEa; and

- \* Encourage public involvement in protecting our rivers.





## Five Year Action Plan

**GOAL: Reduce waste entering our rivers**

### New Initiatives

\* Enact administrative changes to maintain, replace and upgrade waste treatment facilities by formalizing the state policy to require action once a facility reaches 75% of its capacity and investigate innovative alternatives for wastewater and stormwater disposal.

\* Support legislation banning phosphates in detergents.

\* Implement a non-point pollution program in DEQE.

\* Strengthen Title 5, the state environmental code, to tighten up technical standards.

\* Produce new state policies and regulations dealing with privately owned waste water treatment plants when the Generic Environmental Impact Report is completed 13 months from now.

\* Institute a statewide Water Conservation Plan to reduce demand on water supply:

- o implement a retrofit of state facilities for water conservation in partnership with DCPO,

- o educate state workers and investigate the feasibility of supplier sending out conservation information with telephone and other utility bills, and

- o continue to work with industry to reduce waste and recycle water.

### Existing Efforts

- Support money and legislation to fund treatment facilities through a revolving loan fund.

- Implement tough acid rain reduction regulations on sulphur dioxide emissions promulgated by DEQE in April. Recent studies show that up to a third of acid rain is being caused by local sources which need to be controlled at home.

**GOAL: Enforce environmental laws to protect rivers**

### New Initiatives

\* Consider river protection as a key priority for the Environmental Crimes Strike Force.

\* In addition to requiring fines of polluters, restoration of environmental abuses affecting rivers will be required of polluters.





\* Develop a River Watcher Network to work with Environmental Strike Force.

### Existing Efforts

- Establish collaboration between DEQE, Environmental Law Enforcement, the Secretary's Office and the Attorney General's office to detect violations and prosecute offenders in coordinated, river basin-based enforcement plan through the Environmental Strike Force.

## **GOAL: Increase Protection of River Corridors**

### New Initiatives

\* Conduct a Statewide Assessment of river basins to:

- o Use GIS (Geographic Information System) to map and analyze the rivers and watersheds; and

- o Use the assessment to target open space acquisition dollars in these areas. EOEa agencies will spend \$10 million in river related acquisitions on habitat, access, agricultural land, parks, and watershed protection for each of the next five years.

\* Strengthen inland and coastal ACEC Programs by making the regulations consistent, referencing ACEC's in all sections of the Wetlands Protection Act, and by involving local government more by requiring a management/implementation plan be developed and adopted by the town prior to final designation. DEM is assigned administration of the inland ACEC program with a focus on rivers and their watersheds.

\* Develop and distribute guidelines on best management practices for riverfront landowners.

\* Support Natural Valley Storage by proposing a new basin for Corps of Engineers land protection efforts (Charles River was the first and remains the only basin in the country where this non-structural approach has been tried--and with great success).

\* Tightening flood plain management:

- o stress 100 year set back where feasible;
- o request Office of Safety to revise guidelines so we can utilize federal funds (Upton-Jones amendment to National Flood Insurance Act) to move endangered structures; and
- o encourage flood protection, bank stabilization, cultural resource and scenic protection through the creation of local no build buffer zones (particularly in agricultural areas or development sites) by working with the Special Commission on Growth and Change.

\* Consider legislation to give tax breaks (61/61A) for floodplain and riverfront lands kept undeveloped or placed in conservation restrictions.

\* Create a Corridor Protection Program using existing





resources:

- o coordinate the acquisition and protection efforts of all five EOEAs agencies;
- o select a priority river or river segment using the Assessment and direct all agencies to focus planning, acquisition, enforcement, and regulatory programs on the selected area for one year;
- o involve local government, nonprofits, and business in the initial effort to continue it beyond the state's initial push; and
- o use the River Working Group to oversee implementation, annual evaluation and selection of the next river.

### Existing Efforts

- Revise Chapter 91 regulations to expand protection of coastal areas, most rivers and streams.
- Implement the Water Management and Interbasin Transfer Acts.
- Support legislation to protect MDC watershed lands.
- Support legislation for watershed protection statewide.
- Support the land bank bill for funds for open space.
- Implement DEQE's Wetlands Restrictions Act which the legislature passed to protect wetlands on private property.

**GOAL: Better manage river protection and public access agenda**

### New Initiatives

- \* Expand the Adopt-A-Stream efforts to include identification of public access sites.
- \* Conduct a consistency review of all permits and regulations relevant to rivers to assure river needs are met and to eliminate any conflicts (thirteen different permits are involved) and recommend new regulations and streamlining where needed.
- \* File an amendment to the Scenic Rivers Act to emphasize river planning and local involvement.

### Existing Initiatives

- Convene a River Working Group made up of agency, watershed and private representatives to develop this initiative oversee its implementation and advise the Chair of the Water Resources Commission. The Group is responsible for:
  - o coordinating all existing river protection programs through oversight of the Rivers Initiative;
  - o continued policy development;
  - o preparation and implementation of the Assessment;
  - o management of the Corridor Protection Program; and





- o regulation review.
- Increase public access and improve management of access sites:
  - o make sure sites are geographically dispersed and available to handicap users wherever possible; and
  - o increase public information about sites.

### Conclusion

The Great Law of the Six Nations Iroquois Confederacy stated:  
**In our every deliberation, we must consider  
the impact of our decisions on the Next Seven  
Generations.**

For nearly twice seven generations, the rivers of Massachusetts have been serving the settlers who arrived here from Europe. For unknown generations before that they were an integral part of the lives of the native peoples of the region. A River Policy is one step to insure that the decisions we make in the next few years will indeed protect the interests of the Next Seven Generations and beyond.





## SUMMARY OF TWELVE NEW INITIATIVES

- \*\* Speed up process for upgrading or replacing aging treatment facilities
- \*\* Institute water conservation program
- \*\* Initiate a River Watchers Network to work with the Environmental Strike Force
- \*\* Conduct a Statewide Rivers Assessment
- \*\* Strengthen ACEC Programs
- \*\* Create a River Corridor Protection Program
- \*\* Pursue changes in Chapter 40/40A that strengthens cities and towns abilities to protect river corridors through zoning
- \*\* Permanently convene the River Working Group to advise the Chair of the Massachusetts Water Resources Commission
- \*\* Conduct a consistency review of all state river related regulation
- \*\* Expand the Adopt-a-Stream Program to include public access sites on rivers
- \*\* Revise Scenic River Legislation to allow greater local protection of designated rivers
- \*\* Seek administrative measures to ensure that state funds for infrastructure do not damage river systems

